R E M A R K S

Reconsideration of this application, as amended, is respectfully requested.

THE CLAIMS

Claim 1 has been amended to be directed to a transmission state indicating method for a predetermined transmission system, "by SONET (Synchronous Optical Network)/SDH (Synchronous Digital Hierarchy)", in which high capacity data is divided into a plurality of low capacity virtual containers and transmitted via a plurality of channels which configure a communication network by the SONET/SDH based on clocks at the respective channels. In addition, claim 1 has been amended to recite successively detecting factors at the respective channels which are respectively included in a plurality of frames included in a multiplexed frame, and which are to be objects for delay absorption processings corresponding to the transmission states at the respective channels, as a plurality of pointer values "indicating a variation in phase or transmission delay during transmission at said plurality of channels which configure the communication network by the SONET/SDH".

Still further, independent claims 8 and 15 have been amended in a similar manner, and dependent claims 4-6, 11-13 and 17-19

have been amended to better accord with amended independent claims 1, 8 and 15, respectively

No new matter has been added, and it is respectfully requested that the amendments to the claims be approved and entered.

THE PRIOR ART REJECTION

Claims 1-20 were again rejected under 35 USC 103 as being obvious in view of the combination of US 2003/0012188 ("Zelig et al") and 2001/0008536 ("Kibe"). These rejections, however, are again respectfully traversed.

The present invention as recited in amended independent claims 1, 8 and 15 provides a technique which enables confirmation of a transmission state of a communication network in the SONET/SDH transmission system by associating a pointer value indicating the transmission state with each channel. More specifically, in the field of digital data transmission, there is a system called virtual concatenation, in which large-capacity data are transmitted by efficiently utilizing the existing communication network in the following manner. Large capacity data is divided and contained into a plurality of small capacity virtual containers, and after the low capacity data contained in these virtual containers are transmitted via a plurality of channels, the data is correctly assembled and multiplexed to be

transmitted to a large-capacity channel. The respective channels configuring the existing network have respectively different transmission capacities and different transmission distances. Therefore, it is important to predetermine the transmission delays between the respective channels and the amount of variations in phase. When the transmission delays between the channels are at least a predetermined amount of time, the divided virtual containers cannot be correctly assembled into the original frame, thereby causing communication errors.

According to the present invention as recited in amended independent claims 1, 8 and 15, pointer values (channel pointer values) are utilized to indicate transmission states of the channels in the communication network in the SONET/SDH transmission system operating under the virtual concatenation system. That is, transmission delays and variations in phase due to the difference in clock between each of the small-capacitor channels and the large capacitor channel, are associated with respective channels. To this end, factors are detected at the respective channels which are respectively included in the plurality of frames included in the multiplexed frame on which mapping has been carried out by the frame assembling unit. These detected factors are objects for delay absorption processings corresponding to the transmission states at the respective channels, and as recited in amended independent claims 1, 8 and

15, a plurality of pointer values indicate a variation in phase or transmission delay during transmission at the plurality of channels which configure the communication network by the SONET/SDH.

It is respectfully pointed out that n important purpose of detecting the pointer values is to enable visual monitoring thereof, i.e., visual monitoring of the pointer values for multiple channels. Accordingly, claim 1 recites indicating the plurality of pointer values corresponding to the plurality of channels "at the same time", i.e., displaying the pointer values for the channels simultaneously. And independent claims 8 and 15 recite a display unit which indicates the plurality of pointer values at the same time.

It is respectfully submitted that the cited prior art references do not disclose, teach or suggest a transmission state indicating method or apparatus which indicates pointer values, indicating a variation in phase or transmission delay associated with channels, at the same time.

Zelig et al is directed to a technique of transmitting SONET/SDH signals via an IP network (for example, MPLS: Multi-protocol label switching). In Zelig et al, the SONET/SHD signals are packetized and transmitted, and the original SONET/SDH signals are restored from the packet on the receiver side. And it is respectfully pointed out that Zelig et al is

directed to a device in which channel pointers of the transmitter's side contained in the SDH signals are directly sent to the receiver's side. Accordingly, it is respectfully submitted that there is no merit in indicating the values of channel pointers for comparison in the invention of Zelig et al, i.e., displaying the channel pointer values.

Kibe is directed to a device which judges the justification function for the channel pointer values of SONET/SDH signals. That is, in the SONET/SDH signal transmission system of Kibe, when data of the channels are multiplexed and inserted into a frame, the location of insertion is displaced due to, for example, the phase difference between the multiplexed data and the frame into which the data is inserted. In Kibe, displacement of the location is absorbed by adjusting the channel pointer values, and the adjustment of the channel pointer values is called justification. In Kibe, the channel pointer values are limited within a predetermined range and when there are consecutive pointer values outside of this range, the data transmission cannot be properly carried out. When values are outside of the predetermined range or some abnormal state occur continuously a preset number of times, moreover, it is necessary to issue an alarm. In Kibe, when such an SONET/SDH signal process is carried out, it is necessary to check if the justification is properly functioning by analyzing the increment/decrement state

of each channel pointer inserted into the SONET/SDH signal, the range of the pointer values, and the like. According to Kibe, the pointers of a plurality of channels inserted into the frame of the SONET/SDH signal are analyzed so as to check whether the justification is properly functioning for the plurality of channels at the same time.

The Examiner asserts that the combination of Zelig et al with Kibe renders obvious the present invention as recited in each of claims 1-20.

It is respectfully submitted, however, that the present invention is directed to a technique in which pointer values, which indicate a variation in phase or transmission delay due to the difference in clock between a plurality of small-capacity channels and large-capacity channel and are associated with the respective channels, are indicated at the same time to enable simultaneous visual checking or monitoring of multiple pointer values associated with the channels.

By contrast, according to Zelig et al, the pointer values indicating the transmission states in the SONET/SDH signals are sent directly from the transmitter side to the receiver side, and there is no possibility for the pointer values corresponding to a pluraity of channels to be indicated at the same time. And it is respectfully submitted, therefore, that Zelig et al clearly

differs from the present invention as recited in independent claims 1, 8 and 15.

Kibe, moreover, is directed to a technique of checking the justification function for the channel pointer values of each channel when data of a low group (low speed) are multiplexed. Accordingly, it is respectfully submitted that the technique used by Kibe is also clearly different from the present invention in which transmission delay and variation in phase due to the difference in clock between each of a plurality of small-capacity channels and a large-capacity channel, are associated with each respective channel, and indicated at the same time.

It is therefore respectfully submitted that neither Zelig et al nor Kibe suggests a technique similar to that of the present invention as recited in independent claims 1, 8 and 15, and that even if Zelig et al and Kibe were considered in combination as suggested by the Examiner, the present invention as recited in independent claims 1, 8 and 15 would still not be achieved or rendered obvious.

In view of the foregoing, it is respectfully submitted that amended independent claims 1, 8 and 15, and claims 2-7, 9-14 and 16-20 respectively depending therefrom, all clearly patentably distinguish over Zelig et al and Kibe, taken singly or in combination, under 35 USC 102 as well as under 35 USC 103.

Entry of this Amendment, allowance of the claims and the passing of this application to issue are respectfully solicited.

If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned at the telephone number given below for prompt action.

Respectfully submitted,

/Douglas Holtz/

Douglas Holtz
Reg. No. 33,902

Frishauf, Holtz, Goodman & Chick, P.C.
220 Fifth Avenue - 16th Floor
New York, New York 10001-7708
Tel. No. (212) 319-4900

DH:br